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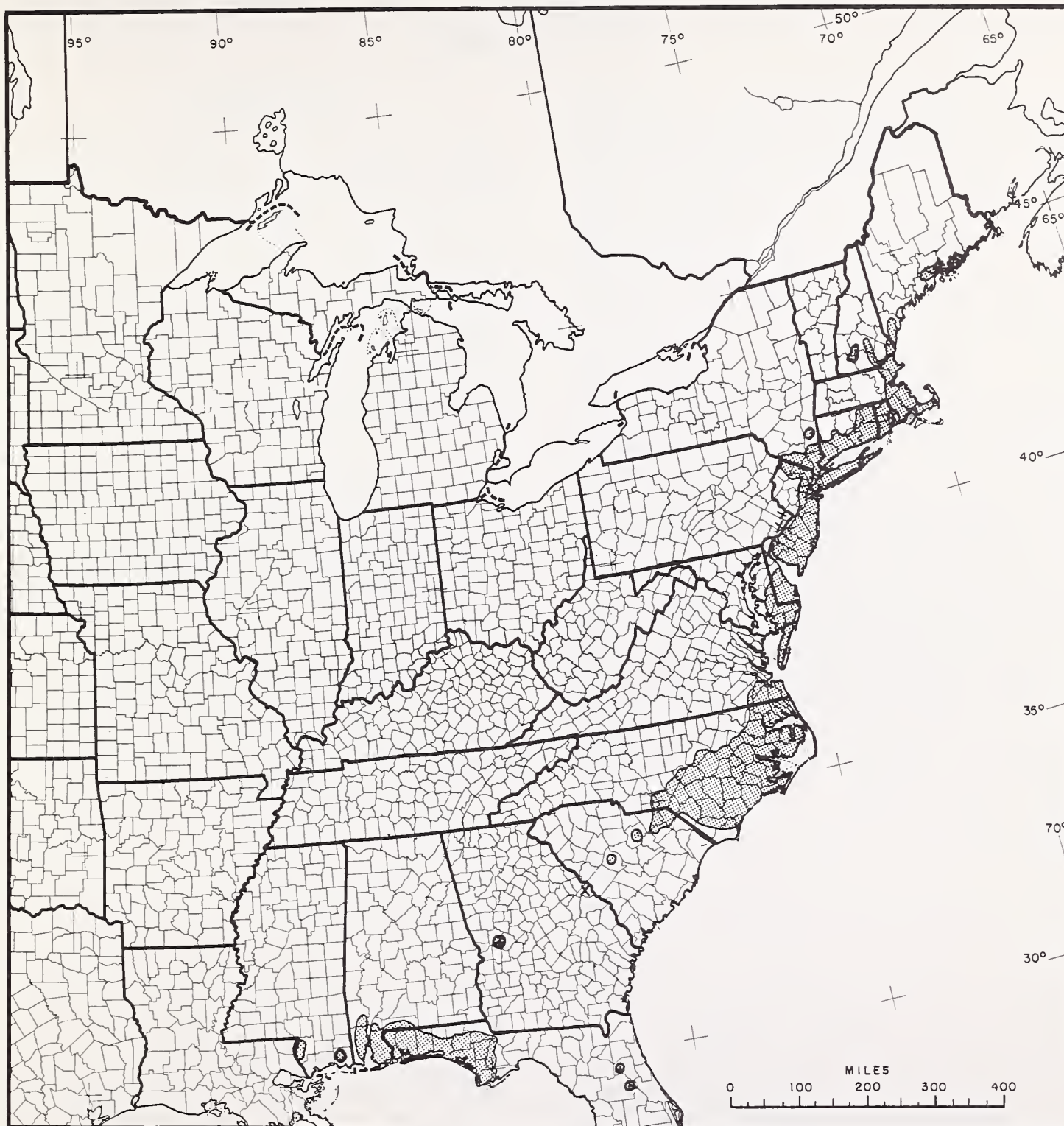
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ATLANTIC WHITE-CEDAR

Atlantic white-cedar is a medium-sized tree that grows in scattered stands in the swamps along the eastern and southern coasts of the United States. The wood is light in weight, soft, low in strength, low in shrinkage, and durable in contact with the ground. Because of its limited production and changes in utilization practices, consumption of this species has declined and is now limited to a few specialty items.



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FIGURE 1.—Natural range for Atlantic white-cedar (*Chamaecyparis thyoides* (L.))

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ATLANTIC WHITE-CEDAR

(*Chamaecyparis thyoides* (L.) B.S.P.)

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DISTRIBUTION

Atlantic white-cedar grows in a narrow belt 50 to 100 miles wide along the Atlantic coast from southern Maine to central Florida, and westward along the Gulf coast to southeastern Mississippi (fig. 1). Although the species occurs over a large area, pure stands are small. They are found in scattered patches along the edges of fresh-water swamps and along the sandy beds of small streams or on sandy plots subject to frequent overflow. The best sites are at low elevations on peat deposits, generally acid. This species is absent or uncommon where peat is underlain by clay or if the peat contains appreciable amounts of silt or clay.

The largest commercial stands originally occurred in southeastern New Jersey, southeastern Virginia, eastern North Carolina, northwestern Florida, and southwestern Alabama. Much cutting has been done in these regions, but they are still the principle sources of supply.

DESCRIPTION AND GROWTH

In the northern part of its range, part of the southern New England States, extreme southern New York, and New Jersey, mature trees reach heights of 40 to 60 feet and diameters of usually less than 16 inches, although some 4-foot diameter trees have been reported. Under optimum growing conditions in Virginia and North Carolina, trees reach a diameter of 9 to 11 inches and a height of 50 to 70 feet in 50 years. Mature trees in eastern South Carolina reach a maximum height of 120 feet and a diameter of 5 feet. In the southernmost part of its range in northwest Florida and southern Alabama, trees grow to a height of about 80 or 90 feet with diameters rarely larger than 24 inches. Atlantic white-cedar is a potentially long-lived tree (some reported to have reached 1,000 years). In closed stands, however, 200 years is perhaps the maximum age.

Atlantic white-cedar tends to grow in pure, dense, even-aged stands known as "juniper or cedar glades," and therefore it lends itself readily to forest management. However, because of its great latitudinal range, it has been found growing with a number of other commer-

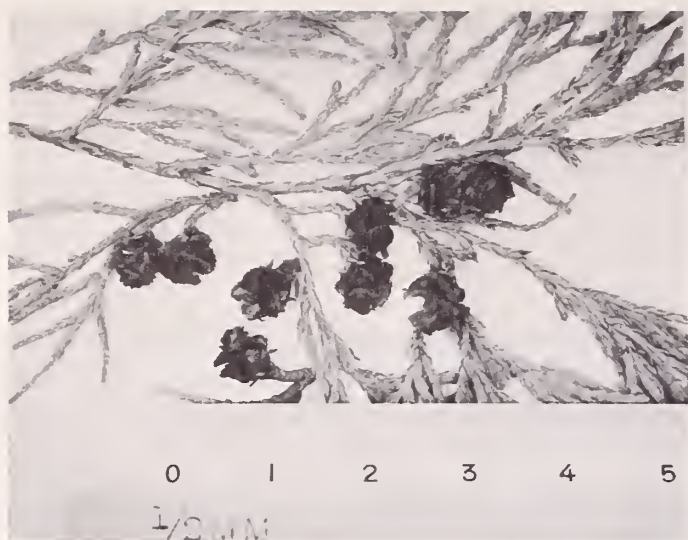
cially important species such as red maple in all parts of its range; with black gum, yellow birch, white pine, and hemlock in New England; with black gum, sweetbay, grey birch, and pitch pine in southern New Jersey; and with pond pine, slash pine, sweetbay, tupelo, baldcypress, redbay, loblolly-bay, and other swamp species in the South. It is reasonably tolerant of shade; however, neither seedling nor mature trees can survive under a closed canopy for more than a few years. It is shallow-rooted and subject to wind-throw, especially in partially open stands.

Reproduction is primarily through seeding though some sprouting occurs in heavily browsed seedlings and saplings. It bears fruit at a relative early age. Under favorable conditions, seedlings 3 years old bear mature cones. Natural reproduction in open stands starts at ages 4 to 5 years and in dense stands at 10 to 20 years. Seed is dispersed by wind and water.

Because of its thin bark and inflammable leaves, Atlantic white-cedar is very susceptible to damage by fire (fig. 2). Few fungi attack this species, and the damage is generally not serious. Some of these fungi, such as *Keithia chamaecyparissi*, attack the foliage; *Gymnosporangium ellissii* causes swelling of bole or branches; *G. biseptatum* causes spindle shaped burls; and *Trametes subrosea* attacks the wood of cut timber. Although the larvae of the common bagworm (*Thyridopteryx ephemeraeformis*) may feed on the foliage of Atlantic white-cedar, this tree has no serious insect enemies.

The bole of a mature tree grown in dense stands is cylindrical, and generally clear of branches for about three-fourths of its length. The crown is small, narrowly conical, composed of slender, horizontal branches, and with somewhat drooping branchlets. The leaves are minute, $\frac{1}{16}$ inch to $\frac{1}{8}$ inch long; keeled and glandular on the back; and dark blue green, turning brown in the second year, but persisting for several years. Cones are erect, about $\frac{1}{4}$ inch in diameter, globose, semifleshy; bluish purple when mature, glaucous, turning brown later; and with 1 to 3 seeds per fertile scale (fig. 2). Seeds are about $\frac{1}{8}$ inch long or smaller, rounded, slightly compressed, light brown with winged margins about as broad but darker in color than the seed. There are about 460,000 seeds

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FIGURE 2.—Leaf and cone characteristics.

per pound. Bark is generally thin over the entire tree, but on old mature trees it is from $\frac{3}{4}$ inch to 1 inch thick (fig. 3). It varies in color from ash gray to light reddish brown on the outside and is usually a



FIGURE 3.—Bark characteristics of Atlantic white-cedar.

bright cinnamon brown underneath. On small branches and young trees, the bark surface is smooth, but it may be slightly furrowed by long shallow fissures. On old trees, the bark is irregularly furrowed into narrow, flat connected ridges that separate into loose, elongated platelike scales, which peel off in long fibrous strips.

COMMON NAMES

The common name for this species is Atlantic white-cedar. It is also referred to as southern white-cedar, white-cedar, juniper, swamp-cedar, post cedar, and false-cypress.

RELATED COMMERCIAL SPECIES

Northern white-cedar (*Thuja occidentalis*) and sometimes eastern red cedar (*Juniperus virginiana*) are included in the reported totals of sawtimber and wood of Atlantic white-cedar. Northern white-cedar is found primarily in the northern part of the range of Atlantic white-cedar.

SUPPLY

In 1940 a rough estimate of the total volume of Atlantic white-cedar was put at 300 million board feet. No current estimates of the total volume of this species, growing stock are available today. It is not separated as a single species in the northeastern part of its range but is lumped with other less commercially important softwoods. In the southern part of its range, however, it has been reported as a single species. Forest survey data available at the southeastern Forest Experiment Station in 1968 showed the growing stock (trees 5 inches and larger) of Atlantic white-cedar in North Carolina, South Carolina, Florida, Virginia to be 73.9 million cubic feet; this amounts to 228.7 million board feet, or 929 million cords. These States as well as New Jersey have been the major supply areas for Atlantic white-cedar in the past.

PRODUCTION

Estimates of the current annual cut of Atlantic white-cedar are not available. Statistics on wood used in various manufacturing industries indicate that approximately 22.7 million board feet of eastern white-cedar was used by industry in 1965. This total, however, also includes Northern white-cedar.

CHARACTERISTICS AND PROPERTIES

The heartwood of Atlantic white-cedar is light brown with a reddish or pinkish tinge and has a slight aromatic odor when freshly cut. The sapwood is

narrow and whitish in color. The wood has a faintly bitter taste, is generally straight-grained and fine-textured, and is considered low in density—about 19 pounds per cubic foot. The wood is moderately soft, weak in bending, weak in endwise compression, and low in shock resistance. It splits easily, finishes smooth, shrinks little, works easily with tools and is very resistant to decay.

Growth rings are distinct but not conspicuous; transition from springwood to summerwood within one growth increment is gradual; and the summerwood zone is narrow and somewhat denser than the springwood. The fibers (tracheids) of this species are small, having an average diameter of between 25 to 35 microns. Average length of these cells is about 3.3 millimeters \pm .42 millimeters. Its anatomical

structure is similar to that of northern white-cedar (*Thuja occidentalis*).

PRINCIPAL USES

During the first 50 years of this century, this species was used principally for poles, shingles, woodenware (tubs, pails, churns), and lumber. The lumber was used for planing mill products (such as siding moulding, etc.), water tanks, boat construction, boxes and crates, and fencing. The 1965 survey of wood used in manufacturing industries indicates that the greatest volume of this species together with northern white-cedar is used for cooperage (boxes and crates), wood household furniture, primary metal products, and industrial millwork.

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